

Sub A1
CLAIMS

1. An air bag assembly in a vehicle for side impact protection of a vehicle occupant, the air bag assembly comprising:

an inflator for discharging a gaseous inflation medium; and

an air bag cushion including a first inflatable portion proximal to

5 the inflator for cushioning the torso of the vehicle occupant, a second inflatable portion distal from the inflator for cushioning the head of the vehicle occupant, a first expansion restraining element extending partially but not completely across the width of the air bag cushion between the first and second inflatable portions, and at least a second expansion restraining element extending partially but not
10 completely across the width of the air bag cushion in opposing staggered relation to the first expansion restraining element such that the expansion restraining elements restrict expansion of the air bag cushion in the region between the first and second inflatable portions.

2. The invention according to Claim 1, wherein the expansion restraining elements comprise integral connective seam structures.

3. The invention according to Claim 1, wherein the air bag cushion is formed from a single piece of material.

4. The invention according to Claim 3, wherein the single piece of material is a woven textile.

5. The invention according to claim 4, wherein the woven textile is formed from a plurality of yarns selected from the group consisting of

nylon yarns and polyester yarns and wherein said plurality of yarns have a linear density in the range of about 105 denier to about 840 denier.

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6. The invention according to Claim 5, wherein the denier per filament of the yarns forming the woven textile is in the range of about 3 to about 6.

7. The invention according to Claim 1, wherein the air bag cushion is formed from a substantially flat blank of material which is folded upon itself to form a folded structure having two layers enclosed by the application of connective perimeter seams along the perimeter of the folded structure.

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8. The invention according to Claim 7, wherein the connective perimeter seams are selected from the group consisting of: sewn seams, RF welded seams, ultrasonic welded seams, and adhesive bonding seams.

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9. The invention according to Claim 7, wherein the expansion restraining elements comprise connective seams extending between the two layers of the folded structure.

10. The invention according to Claim 9, wherein the expansion restraining elements have a generally rounded profile.

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11. An air bag assembly in a vehicle for side protection of a vehicle occupant, the air bag assembly comprising:

an inflator for discharging inflation gas; and

a gas inflatable air bag cushion for deployment adjacent the

5 vehicle occupant wherein the air bag cushion comprises an upper boundary, opposing lateral sides extending away from the upper boundary, and a mouth opening for receipt of the inflation gas, the air bag cushion being formed by folding a single blank of material upon itself along a predetermined fold line to form a folded structure of two layers, applying connective perimeter seams around the perimeter of the folded structure, and applying a plurality of expansion restraining elements between the layers of the folded structure wherein said expansion restraining elements extend partially but not completely across the width of the airbag cushion into the interior of the air bag cushion in offset staggered relation from said opposing lateral sides.

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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